What is claimed is:

1. A method of constructing a computer program developed with an object-oriented programming language, comprising the steps of:

declaring a base class as replaceable in a first source file;

invoking, in the first source file, an operator to create an object of the base class;

compiling the first source file into a first module, including emitting an instruction to create an object of the base class in response to the invoking of the operator to create in the first source file;

defining a replacement class inheriting from the base class in a second source file;

instructing in the second source file to replace the base class with the replacement class to cause creation of an object of the replacement class when the instruction in the first module to create an object of the base class is executed;

compiling the second source file into a second module;

combining the first and second modules in an executable program.

2. A method as in claim 1, wherein the object-oriented programming language is the C++ language.

3. A method as in claim 2, wherein the step of declaring the base class as replaceable includes defining a virtual constructor of the base class.

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4. A method as in claim 2, further including declaring the replacement class as a replacement of the base class by defining a constructor of the replacement class for replacing the base class.

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5. A method as in claim 1, wherein the step of compiling the second source file includes emitting in the second module an instruction to generate a class replacement record indicating that the replacement class is a replacement of the
15 base class.

6. A method as in claim 5, wherein the step of compiling the first source file includes emitting an instruction in the first module to search for a class replacement record
20 concerning the base class.

7. A method as in claim 6, wherein the step of compiling the first source listing includes emitting creation information for an object of the base class in the first
25 module, and wherein the step of compiling the second source listing includes emitting creation information for an object of the replacement class in the second module.

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8. A computer-readable medium having computer programming source code comprising:

a first portion of the source code having:

a definition of a base class;

a declaration that the base class is replaceable during program execution;

an instruction invoking an operator to create an object of the base class; and

a second portion of the source code having:

a definition of a replacement class inheriting from the base class;

a declaration that the replacement class is a replacement for the base class; and

an instruction to replace the base class with the replacement class during program execution.

9. A computer-readable medium as in claim 8, wherein the object-oriented programming language is a compiled language.

10. A computer-readable medium as in claim 9, wherein the object-oriented programming language is the C++ language.

11. A computer-readable medium as in claim 8, wherein the object-oriented programming language is an interpreted language.

12. A computer-readable medium as in claim 8, wherein the second portion of the source code further includes an instruction to end replacement of the base class with the replacement class.

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13. A computer-readable medium as in claim 8, wherein the second portion of the source code further includes an instruction to use a function containing the instruction in the first portion of the source code to create an object of

10 the base class.

14. A computer-readable medium as in claim 8, wherein the declaration that the replacement class is a replacement for the base class identifies a constructor of the replacement

15 class for replacing the base class.

15. A computer-readable medium as in claim 14, wherein the declaration that the base class is replaceable includes an identification of a virtual constructor of the base class.

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16. A method of constructing source code in an object-oriented programming language, comprising the steps of:

declaring a base class as replaceable in a first source file;

25 defining a replacement class inheriting from the base class in a second source file;

declaring in the second source file that the replacement class is a replacement for the base class;

entering in the second source file an instruction to replace the base class with the replacement class during program execution.

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17. A method as in claim 16, wherein the object-oriented programming language is the C++ language.

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18. A computer-readable medium having computer-executable instructions and data comprising:

creation information for creating an object of a base class;

creation information for creating an object of a

15 replacement class derived from the base class;

an instruction to register a replacement relationship between the base class and the replacement class;

an instruction to determine whether a registered replacement relationship between the base class and the

20 replacement class exists upon receiving a request to create an object of the base class;

an instruction to access the creation information for the replacement class upon a determination of existence of the registered replacement relationship between the base class and

25 the replacement class;

an instruction to create an object of the replacement class using the creation information for the replacement class

in response to the request to create an object of the base class.

19. A computer-readable medium as in claim 18, wherein
5   the instruction to create includes an instruction to call a
virtual constructor of the replacement class identified in the
creation information for the replacement class.

20. A computer-readable medium as in claim 18, further
10   including an instruction to unregister the replacement
relationship between the base class and the replacement class.

21. A computer-readable medium as in claim 18, further
including an instruction to call a virtual destructor of the
15   base class to delete the object of the replacement class.

22. A computer-readable medium having computer-
executable instructions to performs steps for compiling a
source listing in an object-oriented programming language into
20   an executable module, comprising:
        upon reading a statement in the source listing defining a
first class as replaceable, emitting into the executable
module a creation information block for the first class;
        upon reading a statement in the source listing defining a
25   second class inheriting from a first class as a replacement
for the first class, emitting into the executable module a
creation information block for the second class,

upon reading an instruction in the source listing to replace the first class with the second class, emitting an instruction to store a class replacement record for the first and second classes in a class replacement registration list;

5   upon reading an instruction in the source listing to create an object of the first class, emitting into the executable module:

an instruction to search the class replacement registration list and to return the pointer to the

10   creation information for the second class if a class replacement record for the first and second classes is found and otherwise return the pointer to the creation information for the first class;

an instruction to create an object according to the

15   creation information pointed to by the returned pointer.

23.   A computer-readable medium as in claim 22, including further computer-executable instructions to perform the step of emitting a virtual destructor for the first class for

20   deleting the object created.

24.   A computer-readable medium as in claim 22, wherein the object-oriented programming language is the C++ language.